

nearby districts. 'Floating' nurseries, supervised by the engineers of the Forest Extension Bureau and intended especially for growing reforestation plants for private properties, are located at Sweetburg, St. Pascal, Mont Joli, Baie St. Paul, Pont Rouge, Victoriaville, Scott and Sherbrooke. Plants are supplied free of charge on request. A dynamic reforestation program is now under way in the province, with an ultimate objective for the next ten years of 200,000,000 plants on Crown and private lands.

The Bureau of Silviculture and Botany, an integral part of the Forest Service, is a research organization. At present it is conducting silvicultural experiments in various areas of the province, in natural forests as well as in plantations, to find solutions to the many problems encountered in the work of improving the forest stand. This work is controlled by a network of permanent study points throughout the province. The Bureau has at its disposal a soil and plant tissue analysis laboratory and a forestry pedologist for the study of problems dealing with mineral foods for plantations, reforestation and silviculture.

**Ontario.**—The management of the forest resources of this province is based upon the Crown Timber Act and the management unit is used as the basic administrative area. For each management unit a plan is prepared according to the Manual of Management Plan Requirements and is submitted to the Minister of Lands and Forests for analysis and approval. All forest activities contemplated during the operating period—cutting, re-establishment and tending—are listed in detail in the operating plan, which is part of and carries out the intent of the management plan. Management plans are revised every 20 years on the up-to-date data of new aerial photographs and a forest re-inventory. The number of management units is subject to change at the time of plan revision, owing to the abandonment or acquisition of timber licences and to division or consolidation of management units. During 1963, 207 management units, classified by ownership and the rights to timber, were recognized: 80 Crown management units, 76 Company management units, 46 Agreement Forest units, and five Nursery Forest units. Of the 80 Crown management units, for which the plans are prepared by Department staff, eight are operating under revised plans, 14 are undergoing scheduled plan revision and 58 are operating under the initial plans. Of the 76 Company management units, for which the management plans are prepared by the licensees, 52 are operating under approved management plans, 20 are in the process of revision and four are operating under initial plans. Of the 46 agreement forest units, for which the plans are prepared by Department staff under agreements with the owners of the land, one is operating under an approved plan, 40 are in the process of plan preparation, and five are undergoing forest inventory. Management plans for the five nursery forests are being prepared by Department staff.

Forest research programs reported in previous Year Books were continued in silviculture, site, tree breeding, reforestation, mensuration and mechanics. A selection of conclusions drawn in 1963 might include the following: by 1963 it was indicated from the tree-breeding studies in red pine that this species is genetically uniform, and therefore an unpromising prospect for improving strains by the conventional means of plus tree selection and seed orcharding; during the year it was found that an application of 200 lb. of urea per acre stimulated new growth of a jack pine plantation near Angus; in 1963 the usefulness was established of a prescribed burning technique by which defective stems of maple below  $\frac{1}{2}$ -inch diameter can be eliminated by one fall burning and larger diameters by repeated burnings; analysis in 1963 of data from a 1962 study of airborne heat-sensory equipment in forest fire detection revealed that over 70 p.c. of spot-size fires can be detected in dense coniferous forests.

During the 1963 fire season, 1,885 forest fires occurred in Ontario, burning a total of 56,133 acres. Fire occurrence was 45 p.c. above the average for the years 1951-61, inclusive, but area burned was 42 p.c. below the average for the same years. Lightning accounted for 17 p.c. of all fires reported. By the end of the fire season, 107 candidates had completed a four-week instructor-training course in fire suppression and, as instructors, carried out training programs in their various districts; special training courses for Indians were held